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EXAMINER

MORRISON, THOMAS A

ART UNIT	PAPER NUMBER
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3653

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/670,333

Applicant(s)

ASADA, TETSUO

Examiner

Thomas A. Morrison

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 18 and 20-29 is/are rejected.
- 7) ☒ Claim(s) 14-17 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/27/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 25, it is unclear how many separation mechanisms are claimed. Are the claimed "two or more separation mechanisms" in claim 25 the same or different from the previously recited "the separation mechanism" in claim 23?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3-9, 11-13, 18, 21, 23-24, 26 and 28, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,606,535 (Larson).

Regarding claim 1, Figs. 3-6 show a paper feed apparatus for use with a paper storage capable of storing a plurality of sheets of paper, a paper feed mechanism having a paper feed roller for separating the paper stored in the paper storage sheet by sheet and capable of feeding the separated paper to a given convey path, and an inclined surface provided in the given convey path such that the inclined surface makes an obtuse angle relative to the paper stored in the paper storage, the paper feed apparatus including

a plurality of projections (70) capable of engaging with ends of the plurality of sheets of paper (see Figs. 6-7) and of projecting from the inclined surface (including surface extending from 76 to 80, and then past 98 and down to roller 94); and

a plurality of resilient arm portions (58, 60, 62, 64, 66 and 68) that hold the respective projections (70) at respective positions so as to project from a surface of the inclined surface, wherein the arm portions (58, 60, 62, 64, 66 and 68) are aligned in at least one row along a conveying direction of the paper (see, e.g., Figs. 4-5 for alignment of arm portions).

Regarding claim 3, Figs. 3-6 and column 4, lines 9-10 disclose that the projections (70) are formed of a material having a high abrasion resistance.

Regarding claim 4, Figs. 4-5 show that the plurality of projections (70) are arranged along the conveying direction of the paper.

Regarding claim 5, Fig. 6 shows that the projections (70) are formed integrally with the arm portions (58, 60, 62, 64, 66 and 68).

Regarding claim 6, Fig. 4 shows that each of the arm portions (58, 60, 62, 64, 66 and 68) has a bent configuration.

Regarding claim 7, Figs. 3 and 6 show that the inclined surface is provided with an elongated hole formed along the conveying direction of the paper (82 or 106), and wherein the plurality of projections (70) project from the inclined surface through the elongated hole.

Regarding claim 8, as best understood, Fig. 4 shows that each of the arm portions (58, 60, 62, 64, 66 and 68) is held in a cantilever manner.

Regarding claim 9, Figs. 4-5 show that each of the arm portions (58, 60, 62, 64, 66 and 68) is held at the both ends thereof. In particular, a shaft (either 71 or 71A) holds one end of each arm and a belt structure (near 46) holds the other end of each arm.

Regarding claim 11, Figs. 4-5 show that each of the arm portions (58, 60, 62, 64, 66 and 68) holds each of the projections (70) independently.

Regarding claim 12, Fig. 3 shows that the paper storage (near 90) is capable of holding the plurality of sheets of paper (82) in an inclined state relative to a horizontal plane.

Regarding claim 13, Figs. 4-6 show a paper separation mechanism for use in a paper feed apparatus provided with a paper feed roller for separating a plurality of stacked sheets of paper and feeding the paper sheet by sheet, the paper separation mechanism including

a paper separation unit including:

a plurality of projections (70) capable of engaging with ends of a plurality of stacked sheets of paper (82) in the paper feed direction (see, e.g., Fig. 3);

a plurality of resilient arm portions (58, 60, 62, 64, 66 and 68) that hold the respective projections (70) at respective positions so as to engage with the ends of the paper (Figs. 6-7); and

a base portion (Fig. 3) that holds the resilient arm portions (58, 60, 62, 64, 66 and 68), wherein the arm portions are aligned in at least one row along a conveying direction of the paper. See, e.g., Figs. 4-5 for arm portion alignment.

Regarding claim 18, Figs. 3-4 show that each of the arm portions (58, 60, 62, 64, 66 and 68) is held in a cantilever manner by the base portion.

Regarding claim 21, Figs. 4-5 show that each arm portion (58, 60, 62, 64, 66 and 68) independently holds the each projection (70).

Regarding claim 23, Figs. 3-6 show a paper feed apparatus including

a paper storage (near 90) capable of storing a plurality of sheets of paper (82) ;

a paper feed mechanism (including 94 in Fig. 3) having a paper feed roller (102) for separating the paper (82) stored in the paper storage (near 90) sheet by sheet and capable of feeding the separated paper to a given convey path; and

an inclined surface (i.e., surface extending from 76 and then past 80 and 98) provided in the given convey path such that the inclined surface (i.e., surface extending from 76 and then past 80 and 98) makes an obtuse angle relative to the paper (82) stored in the paper storage (near 90), wherein the paper separation mechanism according to claim 13 is provided on the inclined surface. The elements for the paper separation mechanism are outlined in claim 13 above.

Regarding claim 24, Fig. 3 shows that the paper storage (near 90) holds the plurality of sheets of paper (82) in an inclined state relative to a horizontal plane.

Regarding claim 26, Fig. 3 shows that the projections (70) make a 80-95 degree angle with respect to the paper (82).

Regarding claim 28, Fig. 3 shows that the projections (70) make a 80-95 degree angle with respect to the paper (82).

3. Claims 1, 4-6, 8, 11-13, 18, 21, 23-24 and 26-29, as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,942,209 (Kawakami).

Regarding claim 1, Figs. 1-9 show a paper feed apparatus for use with a paper storage capable of storing a plurality of sheets of paper, a paper feed mechanism having a paper feed roller for separating the paper stored in the paper storage sheet by sheet and capable of feeding the separated paper to a given convey path, and an inclined surface provided in the given convey path such that the inclined surface makes

an obtuse angle relative to the paper stored in the paper storage, the paper feed apparatus including

a plurality of projections (63) capable of engaging with ends of the plurality of sheets of paper (P) and of projecting from the inclined surface (61); and

a plurality of resilient arm portions (62) that hold the respective projections (63) at respective positions so as to project from a surface of the inclined surface (61), wherein the arm portions (62) are aligned in at least one row along a conveying direction (C) of the paper (P). See, e.g., Figs. 6A-9 for alignment of row of arm portions along conveying direction.

Regarding claim 4, Figs. 6B-9 show that the plurality of projections (63) are arranged along the conveying direction (C) of the paper (P).

Regarding claim 5, Figs. 6A-9 show that the projections (63) are formed integrally with the arm portions (62).

Regarding claim 6, Figs. 6A-9 show that each of the arm portions (62) has a bent configuration.

Regarding claim 8, Figs. 6A-9 show that each of the arm portions (62) is held in a cantilever manner.

Regarding claim 11, Figs. 6A-9 show that each of the arm portions (62) holds each of the projections (63) independently.

Regarding claim 12, Fig. 1 shows that the paper storage (3) is capable of holding the plurality of sheets of paper in an inclined state relative to a horizontal plane. In particular, the spring 24 causes paper storage 3 to be slightly angled.

Regarding claim 13, Figs. 1-9 show a paper separation mechanism for use in a paper feed apparatus provided with a paper feed roller for separating a plurality of stacked sheets of paper and feeding the paper sheet by sheet, the paper separation mechanism including

- a paper separation unit (including 61-63) having

- a plurality of projections (63) capable of engaging with ends of a plurality of stacked sheets of paper (P) in the paper feed direction;

- a plurality of resilient arm portions (62) that hold the respective projections (63) at respective positions so as to engage with the ends of the paper (P); and

- a base portion (61) that holds the resilient arm portions (62), wherein the arm portions (62) are aligned in at least one row along a conveying direction (C) of the paper (P). See, e.g., Figs. 6A-9 for alignment of the arm portions.

Regarding claim 18, Figs. 6A-9 show that each of the arm portions (62) is held in a cantilever manner by the base portion (61).

Regarding claim 21, Figs. 6A-9 show that each arm portions (62) independently holds the each projection (63).

Regarding claim 23, Figs. 1-9 show a paper feed apparatus including

a paper storage (including 3) capable of storing a plurality of sheets of paper (P);

a paper feed mechanism (including 4) having a paper feed roller (4) for separating the paper stored in the paper storage (including 3) sheet by sheet and capable of feeding the separated paper to a given convey path; and

an inclined surface (Fig. 4) provided in the given convey path such that the inclined surface (Fig. 4) makes an obtuse angle relative to the paper stored in the paper storage, wherein the paper separation mechanism according to claim 13 is provided on the inclined surface. The limitations for the paper separation mechanism of claim 13 are outlined above in the rejection of claim 13.

Regarding claim 24, Figs. 1 show that the paper storage (including 3) holds the plurality of sheets of paper (P) in an inclined state relative to a horizontal plane. In particular, the spring 24 allows the paper storage (including 3) to hold paper at an angle.

Regarding claim 26, Fig. 7A shows that the projections (63) make a 80-95 degree angle with respect to the paper (P).

Regarding claim 27, Fig. 7A shows that the projections (63) are designed to bend from the respective arm portions (62).

Regarding claim 28, Fig. 7A shows that the projections (63) make a 80-95 degree angle with respect to the paper (P).

Regarding claim 29, Fig. 7A shows that the projections (63) are designed to bend from the respective arm portions (62).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Larson patent or the Kawakami patent. The Larson patent and the Tanaka patent both disclose the claimed invention except for the arm portions being formed of metal. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the arm portions out of metal, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

5. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Larson patent or the Kawakami patent. The Larson patent and the Tanaka patent both disclose the claimed invention except for the paper separation unit being made of metal. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the separation unit out of metal, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

6. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Larson patent. The Larson patent discloses the claimed invention except for at least two projections on each of the arms (58, 60, 62, 64, 66 and 68). It would have been an obvious matter of design choice to provide multiple projections (e.g., 2 projections) on each arm (58, 60, 62, 64, 66 and 68), since it appears that the invention would perform equally well with at least two projections on each of the arms (58, 60, 62, 64, 66 and 68).

Allowable Subject Matter

7. Claims 14-17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Morrison whose telephone number is (571) 272-7221. The examiner can normally be reached on M-F, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Walsh can be reached on (571) 272-6944. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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